

REMARKS

This is intended as a full and complete response to the Final Office Action dated March 23, 2006, having a shortened statutory period for response set to expire on June 23, 2006. Please reconsider the claims pending in the application for at least the reasons discussed below.

Claims 1-20 remain pending in the application and are shown above. Claims 1-20 are rejected. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 1-20 are rejected under 35 U.S.C. § 103(c) as being unpatentable over *Foo et al.* (U.S. Patent No. 5,124,014). The Examiner notes that *Foo et al.* differs from the present claims in that oxygen is not introduced at a flowrate less than or equal to the flowrate of the cyclic organosiloxane and states that *Foo et al.* prefers a higher flowrate of oxygen. The Examiner asserts that it would have been obvious to use a lower flowrate of oxygen as it is not inventive to discover optimum or workable ranges when the general conditions of a claim are disclosed in the prior art. Applicants respectfully traverse the rejection.

Foo et al. describes depositing a silicon dioxide layer using oxygen and TEOS or TMCTS. *Foo et al.* teaches that if TEOS is used, the oxygen flowrate should be about twice the TEOS flowrate in order to produce good quality silicon dioxide, and that if TMCTS is used, the oxygen flowrate should be about three times the TMCTS flowrate (column 4, lines 43-47). Applicants respectfully submit that *Foo et al.* does not suggest, motivate, or provide a reasonable expectation of success for using a flowrate for oxygen that is lower than a cyclic organosiloxane (TMCTS) flowrate. Applicants respectfully submit that the Examiner's reliance on *In re Boe*, 148 USPQ 507 (CCPA 1966) ("Unpreferred embodiments must be considered in determining obviousness") is erroneous as *Foo et al.* does not provide or suggest any other embodiments, preferred or otherwise, for cyclic organosiloxanes besides the one embodiment that specifies that the oxygen flowrate should be about three times the TMCTS flowrate.

In response to Applicants' previous argument that *Foo et al.* does not teach or suggest controlling oxygen flow and other process conditions as recited in claims 1, 7,

and 15 to deposit low dielectric constant films comprising silicon, oxygen, and carbon, the Examiner asserts that since *Foo et al.* uses organosiloxanes that contain carbon to deposit a silicon oxide layer, it is within the skill of one of ordinary skill in the art that the resulting silicon oxide layer would contain some carbon. Applicants note that as *Foo et al.* describes using TEOS or TMCTS as a substitute for silane, which does not contain carbon, to deposit silicon dioxide dielectric layers (column 3, lines 43-47), *Foo et al.* does not suggest that carbon is included in the silicon dioxide layers or provide a motivation for including carbon in the silicon dioxide layers. Applicants further submit that *Foo et al.* does not suggest, motivate, or provide a reasonable expectation of success for reducing the oxygen flowrate from three times the TMCTS flowrate to a flowrate that is less than or equal to the TMCTS flowrate to deposit a silicon oxide layer that includes carbon.

Thus, *Foo et al.* does not teach, show, or suggest a process for depositing a low dielectric constant film, comprising reacting a cyclic organosiloxane with oxygen in the presence of RF power in a chamber at a pressure of between about 2.5 Torr and about 10 Torr, wherein the oxygen is introduced into the chamber at a flowrate less than or equal to the flowrate of the cyclic organosiloxane into the chamber, and wherein the low dielectric constant film comprises silicon, oxygen, and carbon, as recited in claim 1. Applicants respectfully request withdrawal of the rejection of claim 1 and of claims 2-6, which depend thereon.

Furthermore, *Foo et al.* does not teach, show, or suggest a process for depositing a low dielectric constant film, comprising reacting a cyclic organosiloxane with oxygen in the presence of mixed frequency RF power in a chamber at a pressure of between about 2.5 Torr and about 10 Torr, wherein the oxygen is introduced into the chamber at a flowrate less than or equal to the flowrate of the cyclic organosiloxane into the chamber, and wherein the low dielectric constant film comprises silicon, oxygen, and carbon, as recited in claim 7. Applicants respectfully request withdrawal of the rejection of claim 7 and of claims 8-14, which depend thereon.

Furthermore, *Foo et al.* does not teach, show, or suggest a process for depositing a low dielectric constant film, comprising reacting octamethylcyclo-

tetrasiloxane with oxygen in the presence of mixed frequency RF power in a chamber at a pressure of between about 2.5 Torr and about 10 Torr, wherein the oxygen is introduced into the chamber at a flowrate less than or equal to the flowrate of the octamethylcyclotetrasiloxane into the chamber, and the oxygen flowrate is less than or equal to about 200 sccm, and wherein the low dielectric constant film comprises silicon, oxygen, and carbon, as recited in claim 15. Applicants respectfully request withdrawal of the rejection of claim 15 and of claims 16-20, which depend thereon.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

Having addressed all issues set out in the Final Office Action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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